REMARKS

Applicants respectfully request reconsideration and allowance in view of the foregoing amendments and the following remarks. In the Office Action, claims 1, 4, 12, 14-18, 20 and 21 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,795,740 to Chu et al. ("Chu"), in view of U.S. Patent No. 5,841,385 to Xie et al. ("Xie"). Claims 2, 3, 5-11, 13, 19 and 22-35 are acknowledged as depending from a rejected base claim. In this response claims 12 and 35 are amended.

Allowable Subject Matter

Applicant thanks the Examiner for acknowledging that claims 2, 3, 5-11, 13, 19 and 22-35 include allowable subject matter. However, Applicant believes that the independent claims from which these claims ultimately depend are also allowable. Therefore, Applicant declines the opportunity to amend the claims as suggested at this stage of prosecution.

The §103 Rejections

In the Office Action, claims 1, 4, 12, 14-18, 20 and 21 of the present Application are said to be unpatentable over the combination of Chu and Xie. Applicant respectfully disagrees for at least the reason that Chu and Xie do not teach, suggest or otherwise render obvious every element of the claims.

Regarding claim 1, neither Chu nor Xie teach or suggest calculating dV/dt values for current and previous input signal values and, in response to the dV/dt values, establishing a smooth clip signal value. Chu is directed to techniques for eliminating overflow and underflow in a signal by scaling the signal upon detection of overflow/underflow. (Chu, col. 2, lines 12-28). Chu is silent regarding the calculation of dV/dt values. Further, a stated goal of Chu is to "*maintain the original audio signal* characteristics and general shape of the waveform as much as possible." (Chu, col. 2, lines 6-10, emphasis added). Consequently Chu cannot be said to teach establishment of a smooth clip signal value based on dV/dt values.

The Examiner acknowledges that Chu does not teach the measurement of, or use of, dV/dt values and turns to Xie, asserting that Xie teaches "a soft clipping method that is responsive to short bursts and long bursts of high amplitude signals." (Office Action, page 2, last

paragraph). Applicant respectfully submits that Xie's teachings do not cure the deficiencies of Chu teaching, particularly regarding dV/dt values. Xie is notably silent regarding the calculation of dV/dt values or establishing a smooth clip signal value based on dV/dt values. Instead, Xie teaches an automatic gain control system that uses a signal rectifier 202 to improve the dynamic range of long-term averager 206 and short term energy averager 208. (Xie, col. 5, lines 5-19). It would have been appreciated by a skilled artisan that these averagers 206, 208 comprise a digital low pass filter with long time constant and a digital low pass filter with a short time constant respectively. (*See* col. 5, lines 20-26 and col. 6, lines 6-12). Thus, Xie teaches an *integrator* for producing an *average* value. However, the claims require the calculation of a *differential* value (calculation of dV/dt) which, it will be appreciated, yields a *slope* value. Consequently, it is respectfully submitted that Xie not only does not teach the calculation of dV/dt values but also teaches away from the calculation of dV/dt values.

Nor could there have existed any motivation to combine the references or expectation of success from combining the references. Xie explicitly teaches automatic gain control based on averaging energy measured at an *output*. (Xie, col. 5, lines 5-19). However, claim 1 requires comparing a current *input signal* value to a clip region. Xie does not teach comparing any characteristic of an input signal to a clip region. Chu teaches scaling an *input* signal to prevent clipping while maintaining signal shape and characteristics. (Chu, col. 2, lines 6-10). Thus, Chu and Xie are both directed to gain control to prevent clipping from occurring. However, certain steps of the method of claim 1 operate while the current input signal is within the clip region and therefore, the combination of Chu and Xie cannot be said to render claim 1 obvious.

Furthermore, the teachings of Chu and Xie derive gain control signals from input and output signal respectively. The resulting automatic gain control system would merely have produced a method for scaling a signal and could not have been expected to result in calculating a dV/dt values or establishment of a soft clip signal based on those dV/dt values. Additionally, the combination of Chu and Xie would logically yield an unstable automatic gain control system because of the resultant competing and conflicting control mechanisms. Thus, no reasonable expectation of success would have existed.

Therefore, for at least these reasons, no combination of Chu and Xie can be said to teach or render obvious the inventions of claim 1.

Regarding claim 12, in the Office Action, the Examiner takes notice that "it was notoriously well known in digital signal processing to implement buffering with the advantage of modifying signals without the complex circuitry for real-time changes." (Office Action, sentence spanning pages 2 and 3). Applicant has amended claim 12 to better set forth certain aspects of the invention. As amended, the claim requires passing a sequence of input values through a FIFO buffer of a predetermined size and inserting a smooth clip signal into the sequence in place of corresponding input values buffered in the FIFO. As amended, the claim is further distinguishable over alleged prior art buffering techniques. In particular, it will be noted that passing a sequence of input values through a FIFO buffer may introduce a delay between input and output without removing the claimed soft clip method from real-time. Applicant respectfully submits that the prior art does not teach or suggest value substitution as required in claim 12 or replacing sequences passing through a FIFO with a substituted smooth clip signal.

Claims 4, 14-18, 20 and 21 are allowable for at least the reason that they ultimately depend from an allowable independent claim.

For at least these reasons, Applicant respectfully requests withdrawal of the rejections of claims 1, 4, 12, 14-18, 20 and 21.

Claim Amendments

Claims 12 and 35 have been amended. The amendments add no new matter to the Application and are fully supported in the written description and drawings.

CONCLUSION

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition of allowance and a Notice to that effect is earnestly solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,
PILLSBURY WINTHROP SHAW PITTMAN LLP



ANTHONY G. SMYTH
Reg. No. 55,636
Tel. No. 650 233.4802
Fax No. 650 233-4545

Date: June 21, 2006
2475 Hanover Street
Palo Alto, CA 94304-1114
(650) 233-4500